

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
**MASSACHUSETTS WATERSHED INITIATIVE PROGRAM**

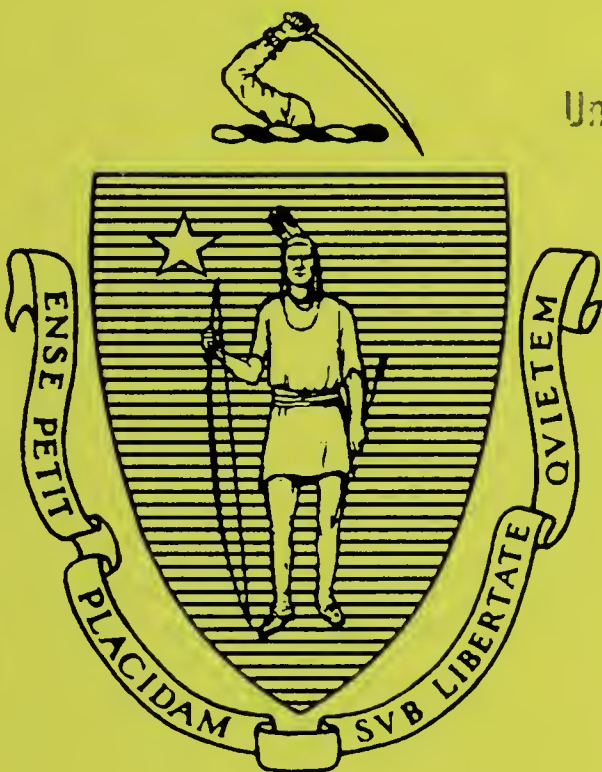
**INDICATIVE PROJECT SUMMARIES**

**1999 - 2001**

GOVERNMENT DOCUMENTS  
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**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
**BUREAU OF RESOURCE PROTECTION**  
Glenn Haas, Acting Assistant Commissioner



**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROGRAM**

**INDICATIVE PROJECT SUMMARIES**

**1999 - 2001**

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**JANUARY 2001**

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**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION  
627 MAIN STREET, 2ND FLOOR  
WORCESTER, MA 01608**

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A complete list of reports published since 1963 is updated annually and printed in July. This report, entitled, "Publications of the Massachusetts Division of Watershed Management, 1963 - (current year)", is also available by writing to the DWM in Worcester.

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## **INTRODUCTION**

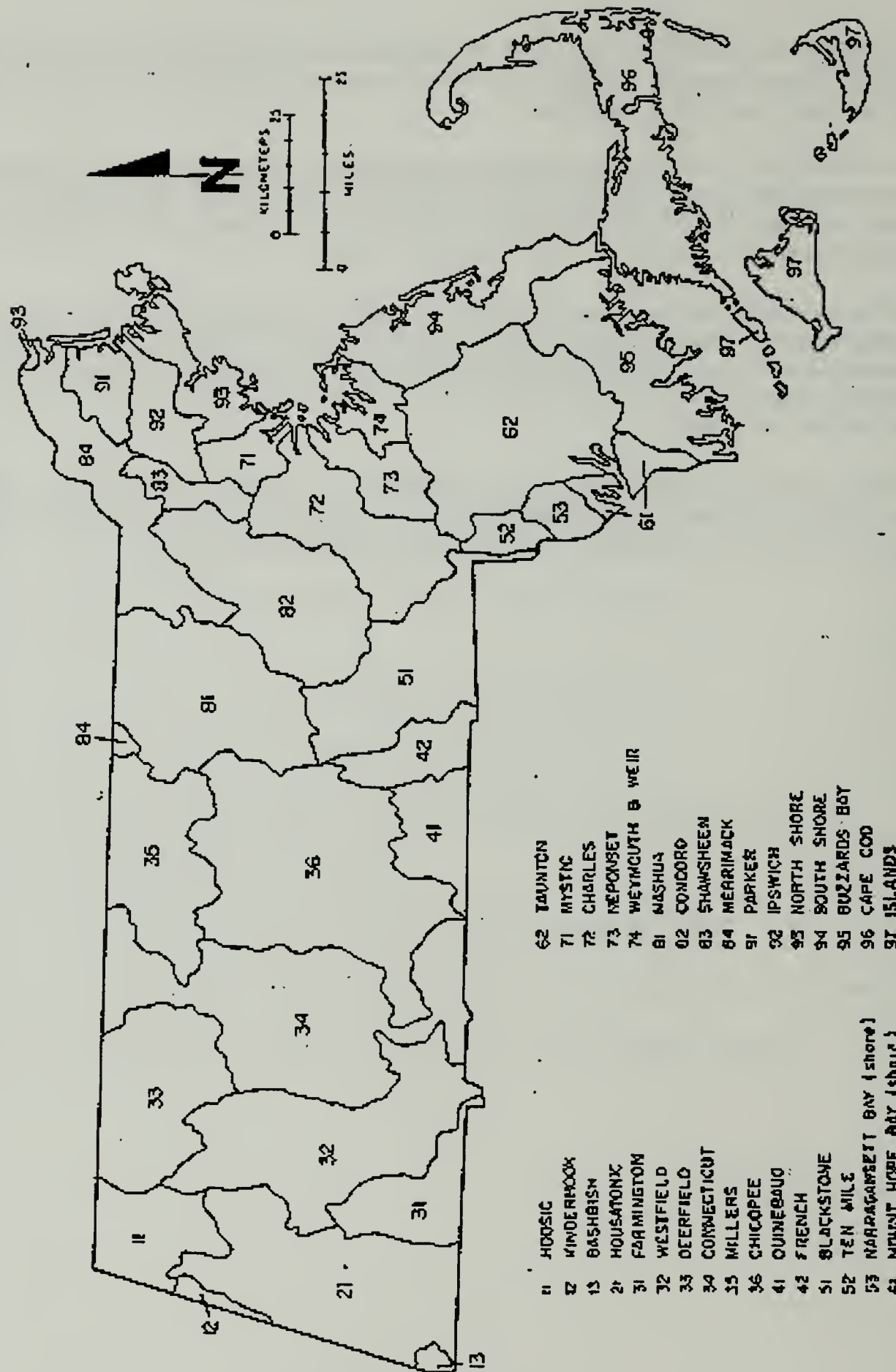
This report presents indicative summaries of 51 projects financed under the Massachusetts Watershed Initiative Program and administered by the Massachusetts Department of Environmental Protection (DEP) in State fiscal years 1999 through 2001.

Each year EOEa Watershed Team Leaders, in conjunction with State and Federal agencies, municipal governments and regional planning agencies, universities, local watershed associations, businesses and other groups develop work plans that identify the most important goals for each watershed and the specific projects and programs which are needed to meet those goals.

The Massachusetts Department of Environmental Protection is designated as a "Lead Agency" to implement some of these MWI priority projects identified by the Teams. Other EOEa agencies such as the Departments of Environmental Management, Fisheries, Wildlife and Environmental Law Enforcement, Food and Agriculture, and the Metropolitan District Commission are serving as leads on implementing other projects and activities.

Activities performed for DEP's watershed priority projects described in this report include hydrologic and water quality monitoring and assessment, habitat assessment, nonpoint source assessment, hydrologic modeling, open space and growth planning, technical assistance and outreach.

# COMMONWEALTH of MASSACHUSETTS RIVER BASINS and COASTAL DRAINAGE AREAS





**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-01/MWI**

**PROJECT TITLE:** Beaver Brook Daylighting Feasibility Study

**INVESTIGATOR:** U.S. Army Corps of Engineers - New England District

**LOCATION:** Blackstone River Basin

**DESCRIPTION:** This project will further study the feasibility of restoring or "Daylighting" Beaver Brook in the City of Worcester.

It is proposed that a 3500 foot reach of Beaver Brook presently existing as a culverted channel be replaced by a 16 foot wide open channel. Side slopes and a 50 foot wide riparian corridor would be vegetated with shrubs and trees. Boulders and deflectors would be added to provide instream habitat for fish and other aquatic life. A system of small ponds and marsh would be constructed to improve water quality and provide additional fish and wildlife habitat. Approximately 2 acres of an adjacent parking lot would be restored to provide additional green space.

The additional investigations will address hydraulic issues and concerns relative to potential odor and other water quality problems possibly caused by cross connections or combined sewer overflows.

Specific tasks to be performed include:

1. conduct hydrologic and hydraulic studies to determine the impacts of the proposed project on flooding;
2. establish environmental design features and criteria and prepare preliminary construction drawings;
3. determine environmental benefits and costs of daylighting Beaver Brook, including construction and maintenance costs;
4. address ownership issues; and
5. prepare a preliminary findings report and a final feasibility study report.

**COST:** \$100,000

**FUNDING:** \$50,000 by EOE  
\$50,000 by U.S. ACOE

**DURATION:** 1999 - 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-02/MWI**

**PROJECT TITLE:** Boston Harbor Hydrologic and Water Quality Investigations

**INVESTIGATOR:** U.S. Geological Survey

**LOCATION:** Boston Harbor Watershed

**DESCRIPTION:** The purpose of this project is to conduct hydrologic investigations and water quality sampling in support of assessment activities of the Boston Harbor Watershed Team. The information collected will be used to assess water quality conditions in the Mystic, Neponset and Weymouth and Weir River Basins of the Boston Harbor Watershed.

Specific tasks will be to:

1. design a water quality sampling network for the Mystic, Neponset and Weymouth and Weir River Basins;
2. conduct streamflow measurements at multiple sites in the Boston Harbor Watershed and rating the stage – discharge relation; and
3. conduct water quality sampling for nutrients, bacteria and metals and perform field measurements for pH, dissolved oxygen, temperature and specific conductance.

**COST:** \$116,783

**FUNDING:** \$90,000 by EOE  
\$26,783 by USGS

**DURATION:** 1999 - 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-03/MWI**

**PROJECT TITLE:** Nutrients, Eutrophication and Harmful Algal Blooms in Buzzards Bay, Massachusetts

**INVESTIGATOR:** University of Massachusetts – Dartmouth

**LOCATION:** Buzzards Bay

**DESCRIPTION** The purpose of this project is to further analyze water quality and biological samples collected since 1987 in Buzzards Bay. This will be accomplished by completing taxonomic analyses of selected phytoplankton samples and completing analyses and consolidation of nutrient and other data collected.

Specific tasks include:

1. perform quantitative taxonomic analyses of phytoplankton community composition;
2. complete analyses and reduction of nutrient chlorophyll and other water quality data;
3. conduct a formal presentation to the EOEA Buzzards Bay Watershed Team and associated watershed partners; and
4. prepare a draft and summary report which includes data tables and graphics for nutrients, plankton and associated data.

**COST:** \$70,060

**FUNDING:** 100% by EOEA

**DURATION:** 1999 – 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-04/MWI**

**PROJECT TITLE:** Implementation of Municipal and Business Outreach Strategy

**INVESTIGATOR:** National Park Service

**LOCATION:** Merrimack River Basin

**DESCRIPTION:** This project will continue work begun in 1998 to reach out to the municipalities and to businesses in the Merrimack River Basin and develop an awareness and involvement by building partnerships.

Specifically, the following tasks will be performed:

1. identify key municipal officials in each of 31 communities and businesses and create a working database of contacts;
2. prepare a slide presentation highlighting the Merrimack River Watershed;
3. prepare printed materials about the watershed, the Watershed Team, and the Massachusetts Watershed Initiative;
4. conduct a series of presentations to municipal boards, community and business groups; and
5. prepare and disseminate a newsletter highlighting the status of work done as part of the Merrimack Watershed Team effort.

**COST:** \$53,000

**FUNDING:** \$27,000 by EOE  
\$26,000 by the NPS and Merrimack River Watershed Council

**DURATION:** 1999 - 2000



**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-05/MWI**

**PROJECT TITLE:** Characterization of Polychlorinated Biphenyls (PCB's) in the Millers River Watershed

**INVESTIGATOR:** U.S. Geological Survey

**LOCATION:** Millers River Basin

**DESCRIPTION:** This project will begin to investigate the current sources of PCB's in the Millers River Basin by collecting and analyzing water samples.

Specific tasks will include:

1. deploying passive sampling devices at selected locations on the Millers River and Otter River;
2. measuring current velocity at each site during sample deployment to estimate the volume of water sampled by the passive samplers;
3. retrieving samplers and analyzing samples for PCB congeners;
4. calculating appropriate average concentrations of PCB's in the water during the sampling interval; and
5. report findings and recommendations for further investigation.

**COST:** \$80,000

**FUNDING:** \$50,000 by EOE  
\$25,000 by DEP  
\$ 5,000 by DEM

**DURATION:** 1999 - 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-06/MWI**

**PROJECT TITLE:** GIS Data Layers of Stormdrain Systems and Solutions to Hot Spot Problems

**INVESTIGATOR:** National Park Service

**LOCATION:** Shawsheen River Basin

**DESCRIPTION:** The propose of this project is to continue mapping and documenting storm drain system conditions and solve identified nonpoint source pollution problems in the Shawsheen River Basin.

Tasks will include:

1. review of existing storm drain maps and related information for each town;
2. recruitment and training of volunteers to locate storm drain and outlet pipes and record conditions;
3. collecting of GPS data for storm drains and outlet pipes;
4. preparing a storm drain report and GIS map for distribution to towns;
5. locating, mapping and describing “hot spot” nonpoint source pollution problems/sources;
6. preparing a draft and final action plan for resolving problems; and
7. implementing action plan

**COST:** \$ 73,500

**FUNDING:** \$35,000 by EOE  
\$38,500 by NPS and Merrimack River Watershed Council

**DURATION:** 1999 – 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-07/MWI**

**PROJECT TITLE:** Establishment of a Technical Advisory Committee for the Eel River Nutrient Management Plan

**INVESTIGATOR:** University of Massachusetts – Dartmouth

**LOCATION:** South Coastal Watershed

**DESCRIPTION:** The purpose of this project is to establish and convene a multi-disciplinary Eel River Technical Advisory Committee (TAC) to assist resource managers evaluate nutrient related issues affecting the Eel River System in Plymouth.

The overall goal of the Eel River TAC is to help evaluate the nutrient related ecological health of the Eel River System under current conditions and to determine its potential change under projected alterations in nutrient loading.

Tasks of this project include:

1. establishment of multi-disciplinary Eel River Technical Advisory Committee;
2. chair the TAC schedule, coordinate and conduct formal TAC meetings;
3. preparation of a report of the consensus of the TAC with recommendations.

**COST:** \$20,000

**FUNDING:** 100% by EOEa

**DURATION:** 1999 - 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-08/MWI**

**PROJECT TITLE:** An Assessment of Contamination of Coles Brook, Seekonk

**INVESTIGATOR:** University of Massachusetts – Dartmouth

**LOCATION:** Ten Mile River Basin

**DESCRIPTION:** This project will investigate the source of bacterial contamination in Coles Brook, a public water supply source for the town of Seekonk.

An assessment of potential nonpoint source pollution in the Coles Brook Watershed within the Zone 2 of public water supply wells will be performed.

The study will be conducted in cooperation with the Seekonk Water District, National Resource Conservation Service and EOEAs Ten Mile River Watershed Team.

Tasks will include:

1. develop a GIS map of the surface waters of Coles Brook including the location of public water supply wells;
2. preparation of a Quality Assurance Project Plan (QAPP);
3. conduct water quality sampling during wet and dry weather conditions;
4. development of outreach materials,
5. assist project partners develop management recommendations; and
6. preparation of a final project assessment report and recommendations.

**COST:** \$10,000

**FUNDING:** 100% by EOEAs

**DURATION:** 1999



**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-09/MWI**

**PROJECT TITLE:** Assabet River Total Maximum Daily Load (TMDL) Investigations

**INVESTIGATOR:** U.S. Army Corps of Engineers – New England District

**LOCATION:** Concord (Sudbury-Assabet-Concord) River Basin

**DESCRIPTION:** This project will collect information for use in determining a Total Maximum Daily Load (TMDL) for nutrients in the Assabet River.

Specific tasks will be to:

1. establish of an Assabet TMDL Technical Advisory Committee;
2. conduct a review and analysis of existing data on water quality, aquatic plants, algae;
3. perform a review of selected water quality models for use as potential tools for allocating nutrient loads;
4. develop a Quality Assurance Project Plan (QAPP);
5. conduct water quality sampling for nutrients under dry and wet weather conditions;
6. conduct biological sampling for aquatic plants and algae;
7. conduct sediment sampling; and
8. train citizen volunteer monitors.

**COST:** \$85,500

**FUNDING:** 100% by EOEa

**DURATION:** 1999 – 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-10/MWI**

**PROJECT TITLE:** Hudson and Housatonic Watersheds Stormwater Assessment Project

**INVESTIGATOR:** Berkshire Regional Planning Commission

**LOCATION:** Hudson and Housatonic River Basins

**DESCRIPTION:** This project will identify and assess the extent of stormwater problems in the Hudson and Housatonic River Basins and identify potential solutions or projects for remediation.

Assessment activities in the Hudson Basin will focus on identifying vulnerable subwatersheds while work in the Housatonic Basin will focus on protecting lakes and ponds from identified stormwater problems.

The following tasks will be performed:

1. Organize an advisory group to help guide the project and represent local concerns;
2. Develop and apply a decision-making process for prioritizing subwatersheds and lakesheds based on their vulnerability to storm water problems;
3. Develop a process for identifying viable stormwater remediation projects;
4. Organize and present a workshop for municipal officials and others; and
5. prepare a final report summarizing findings.

**COST:** \$100,445

**FUNDING:** 100% by EOEA

**DURATION:** 1999 – 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-11/MWI**

**PROJECT TITLE:** Comprehensive Data Assessment in Selected Subwatersheds of the North Coastal Watershed

**INVESTIGATOR:** Salem Sound 2000

**LOCATION:** North Coastal Watershed

**DESCRIPTION:** The purpose of this project is to review and compile water quality and other information in four subwatersheds in the North Coastal drainage area and identify data gaps.

The information will be used to help determine Total Maximum Daily Loads (TMDL's) for each identified subwatershed.

The findings of this study will be presented to local municipal employees and officials from planning boards, selectmen, city councils, Departments of Public Works and Boards of Health to help establish a link between the general concept of nonpoint source pollution and solutions to specific problems located within their respective communities.

Tasks include:

1. selections of four subwatersheds which exhibit a common water quality or resource problems;
2. compilation and interpretation of pertinent data sets including water quality, land use and bioassessments;
3. identification of data gaps to be addressed in the next watershed cycle;
4. presentation of findings in coordination with local watershed associations and other stakeholder groups; and
5. preparation of a final report summarizing project activities.

**COST:** \$49,992

**FUNDING:** 100% by EOEa

**DURATION:** 1999 – 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-12/MWI**

**PROJECT TITLE:** Pilot Project for Identification of Unmapped Tributaries and Intermittent Streams

**INVESTIGATOR:** U.S. Geological Survey

**LOCATION:** South Coastal Watershed

**DESCRIPTION:** The purpose of this project is to develop and test statistically-based hydrologic methodologies that can be used to better identify perennial and intermittent streams as applicable to the Massachusetts Rivers Protection Act.

Specific tasks will include:

1. develop regression equations (i.e., statistical relation) relating the probability of average zero-flow to basin characteristics (e.g., drainage area) on a statewide basis for application to South Coastal Streams;
2. conduct field verification of no-flow points on selected streams as estimated by the zero flow equation developed; and
3. develop a digital data layer of intermittent and perennial streams.

**COST:** \$86,852

**FUNDING:** \$73,500 by EOE  
\$13,352 by USGS

**DURATION:** 1999 – 2000



**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-13/MWI**

**PROJECT TITLE:** Pilot Project for Technical Assistance to Local Officials on Environmental Strategies to Preserve, Protect and Restore Natural Resources

**INVESTIGATOR:** Metropolitan Area Planning Council

**LOCATION:** South Coastal Watershed

**DESCRIPTION:** This project will provide technical assistance to local officials to protect and restore watershed resources, including water quality, habitat protection, and open space/recreation resources. The project will provide technical documents and circuit-rider planning assistance to communities, and provide residential build-out analyses for selected towns in the watershed.

The following tasks will be performed:

1. prepare residential build-out analyses for two communities;
2. review local master plans and comprehensive plans, and open space plans and land acquisition priorities for Cohasset, Duxbury, Hanover, Marshfield, Norwell, Pembroke, Rockland and Scituate and make recommendations; and
3. provide technical assistance to Kingston, Pembroke and Plymouth for identifying opportunities for restoration to remedy major nonpoint source problem areas to foster regional coordination of management and protection provisions between communities, and to integrate water quality protection with local and regional planning.

**COST:** \$50,000

**FUNDING:** 100% by EOEa

**DURATION:** 1999 – 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-14/MWI**

**PROEJCT TITLE:** An Assessment of Causes of Water Quality Impairment in the Westfield River

**INVESTIGATOR:** Environmental Science Services, Inc.

**LOCATION:** Westfield River Basin

**DESCRIPTION:** The purpose of this project is to identify and assess the causes and sources of water quality impairment in the Westfield River. This will include water quality sampling during dry and wet weather conditions and aquatic macroinvertebrate and periphyton assessments.

Specific tasks include:

1. develop a Quality Assurance Project Plan (QAPP);
2. conduct water quality sampling for nitrate-nitrogen, ammonia-nitrogen, total kjeldahl nitrogen, total and dissolved phosphorus, fecal coliform bacteria, dissolved oxygen, turbidity, specific conductance, pH, and temperature;
3. conduct biological assessments for aquatic macroinvertebrates and periphyton communities; and
4. identification of pollutant sources in descriptive and graphic form.

**COST:** \$49,900

**FUNDING:** 100% of EOE A

**DURATION:** 1999 - 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-15/MWI**

**PROJECT TITLE:** An Investigation of Stormwater and Mainstem Loads of Bacteria, Nutrients and Selected Metals in the Lower Charles River Watershed

**INVESTIGATOR:** U.S. Geological Survey

**LOCATION:** Charles River Basin

**DESCRIPTION:** This project will collect water quality and streamflow in the Lower Charles River and tributaries. The information will be used to help focus regulatory and mitigation efforts on those practices having the most negative impact on water quality.

The objectives of this study are to:

1. determine annual and storm-event loads of bacteria, nutrients , and selected metals in the mainstem of the Charles River at the Watertown Dam, and evaluate the representativeness of samples presently being collected at this site by other organizations;
2. measure separate stormwater (non-combined sewer overflow) flows and contaminant loads to the Lower Charles River from the largest four sub-basins, and model the flows and loads generated by the entire Lower Charles Watershed from 3-month and 1-year design storms; and
3. determine contaminant concentrations in the Lower Charles mainstem at selected bridge cross sections immediately following the storm events sampled.

**COST:** \$902,000

**FUNDING:** \$105,937 by EOE  
\$308,000 by Massachusetts Water Resources Authority  
\$260,000 by U.S. Geological Survey  
\$ 19,063 by Department of Environmental Protection  
\$209,000 by U.S. Environmental Protection Agency

**DURATION:** 1999 - 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-16/MWI**

**PROJECT TITLE:** Technical Assistance for Water Quality Assessment Activities

**INVESTIGATOR:** Department of Environmental Protection

**LOCATION:** Statewide Massachusetts

**DESCRIPTION:** This contractor will be responsible for preparing water quality assessment reports, assisting in water quality monitoring efforts, developing new approaches for presenting and disseminating water quality information, and communicating with the public relative to assessment findings.

Specifically, the contractor will be responsible for:

1. preparing water resource assessment reports using data and other appropriate information;
2. conducting meetings with various agency staff, citizen groups, municipal officials and consultants relating to resource assessments;
3. assisting in all aspects of water resource monitoring and assessment including project plan development, field monitoring, data management, data analysis and interpretation, and resource assessment reporting;
4. developing new approaches for presenting and disseminating water resource assessments; e.g., via the internet;
5. final review of all assessment reports to ensure the highest possible quality of product before dissemination; and
6. responding to public requests for water resource assessment information.

**COST:** \$50,000

**FUNDING:** 100% by EOEa

**DURATION:** 1999 – 2000



**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-17/MWI**

**PROJECT TITLE:** Technical Assistance for Water Quality Monitoring Activities

**INVESTIGATOR:** Department of Environmental Protection

**LOCATION:** Statewide Massachusetts

**DESCRIPTION:** This contractor will perform environmental monitoring and assessment work and develop and maintain Quality Assurance/Quality Control (QA/QC) procedures for monitoring and data management for the Watershed Planning Program of the Massachusetts Division of Watershed Management (DWM).

Specifically, the contractor will be responsible for:

1. evaluating all DWM data to assure that all QA/QC procedures are followed;
2. working with DEP's Wall Experiment Station to ensure that samples delivered to and data received from the laboratory have followed appropriate QA/QC procedures;
3. developing Standard Operating Procedures for all DWM field monitoring QA/QC and data recording QA/QC procedures;
4. assisting in all activities aspects of water resource monitoring and assessment including project plan development, field monitoring, data management, data analysis and interpretation, and resource assessment reporting;
5. researching current literature on field monitoring and QA/QC issues to ensure that DWM procedures are up-to-date and appropriate for the data objectives;
6. reviewing and commenting on all DWM Quality Assurance Project Plans (QAPP's) for completeness and accuracy; and
7. reviewing QAPP's and QA/QC information for data received from external sources and determining the level of usefulness in making water resource assessments.

**COST:** \$50,000

**FUNDING:** 100% by EOEa

**DURATION:** 1999 – 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 99-18/MWI**

**PROJECT TITLE:** Seasonal Support for Water Quality Monitoring and Laboratory Activities

**INVESTIGATOR:** Department of Environmental Protection

**LOCATION:** Statewide Massachusetts

**DESCRIPTION:** The seasonal support staff will participate in water quality and biological monitoring programs of the Division of Watershed Management and assist in the functions and operations of the Division of Environmental Analysis of the Wall Experiment Station.

Specific duties will include:

1. participate in water quality and ecological field surveys by calibrating sampling equipment, obtaining field samples, delivering samples to the analytical laboratory, and processing biological samples;
2. participate in the sampling and analysis of fish, aquatic macroinvertebrate and algal populations and their habitat;
3. participate in stream discharge measurements and other hydrological techniques;
4. assist in compiling and entering field and laboratory environmental monitoring data into electronic databases;
5. assist with water data analysis and report preparation;
6. prepare environmental samples for analysis;
7. operate and maintain laboratory instrumentation;
8. maintain accurate records of samples analyzed and of analytical results; and
9. participate in laboratory quality assurance programs.

**COST:** \$75,000

**FUNDING:** 100% by EOE A

**DURATION:** 1999 - 2000

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-01/MWI**

**PROJECT TITLE:** Characterization of Polychlorinated Biphenyls (PCB's) in the Millers River Watershed Phase 2 Investigations

**INVESTIGATOR:** U.S. Geological Survey

**LOCATION:** Millers River Basin

**DESCRIPTION:** This project will continue to investigate the current sources of PCB's in the Millers River Basin by collecting and analyzing water samples.

Specific tasks will include:

1. deploying passive sampling devices at selected locations on the Millers River and Otter River;
2. measuring current velocity at each site during sample deployment to estimate the volume of water sampled by the passive samplers;
3. retrieving samplers and analyzing samples for PCB congeners;
4. calculating appropriate average concentrations of PCB's in the water during the sampling interval; and
5. report findings and recommendations.

**COST:** \$85,000

**FUNDING:** \$85,000 by EOEA

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-02MWI**

**PROJECT TITLE:** SuAsCo Total Maximum Daily Load (TMDL) Phase 2 Investigations

**INVESTIGATOR:** U.S. Army Corps of Engineers – New England District

**LOCATION:** Concord (Sudbury-Assabet-Concord) River Basin

**DESCRIPTION:** This project will continue to collect information for use in determining a Total Maximum Daily Load (TMDL) for nutrients in the Assabet River and begin a sampling program for TMDL analysis in the Sudbury and Concord Rivers.

Specific tasks will be to:

1. update the Quality Assurance Project Plan (QAPP) for the Assabet River and prepare a QAPP for the Sudbury and Concord River sampling;
2. conduct additional water quality and biological sampling in the Assabet River;
3. conduct water quality and biological sampling in the Sudbury and Concord Rivers; and
4. report findings.

**COST:** \$177,500

**FUNDING:** \$127,500 EOE  
\$ 50,000 by USACOE

**DURATION:** 2000-2001



**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-03MWI**

**PROJECT TITLE:** Development of Watershed Management Plans for Rock and Pentucket Ponds

**INVESTIGATOR:** Merrimack Valley Planning Commission

**LOCATION:** Parker River Basin

**DESCRIPTION:** The purpose of this project is to prepare action oriented watershed management plans for both Rock and Pentucket ponds in the Parker River watershed.

Specific tasks include:

1. compile and summarize existing data and identify key data gaps;
2. inventory and map key watershed characteristics;
3. assess point and nonpoint source pollution;
4. evaluate existing local land use and pollution control measures;
5. develop comprehensive management recommendations to enhance and protect the water quality for Rock and Pentucket Ponds;
6. conduct a Public Outreach and Education campaign for Watershed Stakeholders including municipalities, shorefront property owners and the public at large and other interested stakeholders; and
7. prepare final report.

**COST:** \$29,850

**FUNDING:** 100% by EOEa

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-04/MWI**

**PROJECT TITLE:** Quaboag Sub-Basin Nonpoint Source Assessment

**INVESTIGATOR:** Environmental Science Services, Inc.

**LOCATION:** Chicopee River Basin

**DESCRIPTION:** The purpose of this project is to identify ways to protect and improve water quality in the Quaboag Sub-basin, with particular focus on the Wickaboag Pond watershed. This project will provide the link between various land uses and the sources of any water quality problems within the Quaboag Sub-basin.

Specific tasks include:

1. compile and summarize existing data;
2. conduct P8 modeling of nonpoint source pollution;
3. perform water quality monitoring for P8 model calibration;
4. identify sub-basins that are currently impaired as well as those that are projected to have a potential for future water quality impairment; and
5. prepare a final project report.

**COST:** \$24,500

**FUNDING:** 100% by EOE A

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-05/MWI**

**PROJECT TITLE:** Habitat Assessment for French and Quinebaug Basins

**INVESTIGATOR:** Environmental Science Services, Inc.

**LOCATION:** French and Quinebaug River Basins

**DESCRIPTION:** The purpose of this project is to conduct habitat assessments and aquatic macroinvertebrate sampling in the French and Quinebaug River Basins.

Specific tasks include:

1. QAPP preparation;
2. map aquatic habitat in up to 50 selected reaches in the French and Quinebaug Rivers for use in future water quality assessment activities;
3. perform macroinvertebrate sampling;
4. conduct water quality sampling and streamflow measurements; and
5. prepare final report.

**COST:** \$15,000

**FUNDING:** 100% by EOEa

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-06/MWI**

**PROJECT TITLE:** Shawsheen Watershed Storm Drain Mapping

**INVESTIGATOR:** Merrimack River Watershed Council

**LOCATION:** Shawsheen River Basin

**DESCRIPTION:** The purpose of this project is to continue and expand on the 1999 Shawsheen watershed storm drain mapping project. Additional storm drains will be located, described and characterized in GIS format according to criteria such as size, slope, percent impervious surface, and land use. Work will be done in partnership with the Shawsheen River Watershed Association.

Specific tasks include:

1. complete locating, mapping, describing and GIS formatting of most if not all storm drain outlets;
2. develop criteria that will assure consistent information is collected on stormwater drainage areas for ranking and characterization relative to flood potential;
3. conduct GIS mapping; and
4. prepare final report.

**COST:** \$20,000

**FUNDING:** 100% by EOE A

**DURATION:** 2000 – 2001



**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-07/MWI**

**PROJECT TITLE:** Boston Harbor Hydrologic and Water Quality Investigations

**INVESTIGATOR:** Neponset River Watershed Association

**LOCATION:** Boston Harbor Basin

**DESCRIPTION:** This project will conduct water quality, biological and hydrologic investigations at selected locations in the Neponset and Mystic River Basins.

Specific tasks include:

1. prepare QAPP;
2. conduct monthly water quality sampling and streamflow measurements;
3. conduct dry and wet weather water quality sampling and streamflow measurements;
4. perform follow-up bracket sampling; and
5. prepare final report.

**COST:** \$40,000

**FUNDING:** 100% by EOEA

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-08/MWI**

**PROJECT TITLE:** Targeting and Eliminating Untreated Sewage Discharges

**INVESTIGATOR:** URS Greiner Woodward Clyde

**LOCATION:** North Coastal Basin

**DESCRIPTION:** This project will develop and implement a program to target and eliminate illicit sewer connections in selected sub-watersheds in the North Coastal Basin.

Specific tasks include:

1. prepare a QAPP and conduct sampling to target outfalls that have illicit connections;
2. conduct detailed illicit connection identification in selected sub-watersheds;
3. conduct detailed illicit connection identification and develop an implementation plan for North River sub-watershed; and
4. prepare final project report.

**COST:** \$60,000

**FUNDING:** 100% by EOEa

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-09/MWI**

**PROJECT TITLE:** North Coastal Watershed Setting Priorities at the Sub-Watershed Level

**INVESTIGATOR:** Salem Sound 2000

**LOCATION:** North Coastal Basin

**DESCRIPTION:** This project will host a series of forums in the North River, Saugus River, Gloucester Harbor and Smallpox Brook Sub-watershed to present and prioritize the findings of the previously conducted comprehensive data assessment project.

Specific tasks include:

1. conduct a general public forum on priority setting;
2. conduct two sub-watershed meetings; and
3. prepare a final report.

**COST:** \$18,010

**FUNDING:** 100% by EOEA

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-10/MWI**

**PROJECT TITLE:** Miacomet Pond Nutrient Loading Model

**INVESTIGATOR:** Applied Sciences Associates

**LOCATION:** Islands (Nantucket)

**DESCRIPTION:** This project will develop a computer model to support management of Miacomet Pond. The model will support hydrology, water quality, and TMDL studies, development of flood and water quality management strategies and development of hydrologic and water quality monitoring programs.

Specific tasks include:

1. review of documents, data and other relevant information about Miacomet Pond;
2. prepare a QAPP and conduct sampling;
3. conduct modeling and model calibration;
4. conduct project outreach; and
5. prepare final report.

**COST:** \$49,963

**FUNDING:** 100% of EOE A

**DURATION:** 2000 – 2001



**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-11/MWI**

**PROJECT TITLE:** Technical Assistance for Water Quality Assessment Activities

**INVESTIGATOR:** Department of Environmental Protection

**LOCATION:** Statewide Massachusetts

**DESCRIPTION:** This contractor will be responsible for preparing water quality assessment reports, assisting in water quality monitoring efforts, developing new approaches for presenting and disseminating water quality information, and communicating with the public relative to assessment findings.

Specifically, the contractor will be responsible for:

1. preparing water resource assessment reports using data and other appropriate information;
2. conducting meetings with various agency staff, citizen groups, municipal officials and consultants relating to resource assessments;
3. assisting in all aspects of water resource monitoring and assessment including project plan development, field monitoring, data management data analysis and interpretation, and resource assessment reporting;
4. developing new approaches for presenting and disseminating water resource assessments; e.g., via the internet;
5. final review of all assessment reports to ensure the highest possible quality of product before dissemination; and
6. responding to public requests for water resource assessment information.

**COST:** \$50,000

**FUNDING:** 100% by EOEa

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-12/MWI**

**PROJECT TITLE:** Technical Assistance for Water Quality Monitoring Activities

**INVESTIGATOR:** Department of Environmental Protection

**LOCATION:** Statewide Massachusetts

**DESCRIPTION:** This contractor will perform environmental monitoring and assessment work and develop and maintain Quality Assurance/Quality Control (QA/QC) procedures for monitoring and data management for the Watershed Planning Program of the Massachusetts Division of Watershed Management (DWM).

Specifically, the contractor will be responsible for:

1. evaluating all DWM data to assure that all QA/QC procedures are followed;
2. working with DEP's Wall Experiment Station to ensure that delivered to and data received from the laboratory have followed appropriate QA/QC procedures;
3. developing Standard Operating Procedures for all DWM field monitoring QA/QC and data recording QA/QC procedures;
4. assisting in all activities aspects of water resource monitoring and assessment including project plan developing, field monitoring, data management, data analysis and interpretation, and resource assessment reporting;
5. researching current literature on field monitoring and QA/QC issues to ensure that DWM procedures are up-to-date and appropriate for the data objectives;
6. reviewing and commenting on all DWM Quality Assurance Project Plans (QAPP's) for completeness and accuracy; and
7. reviewing QAPP's and QA/QC information for data received from external sources and determining the level of usefulness in making water resource assessments.

**COST:** \$50,000

**FUNDING:** 100% by EOEA

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 00-13/MWI**

**PROJECT TITLE:** Seasonal Support for Water Quality Monitoring and Laboratory Activities

**INVESTIGATOR:** Department of Environmental Protection

**LOCATION:** Statewide Massachusetts

**DESCRIPTION:** The seasonal support staff will participate in water quality and Biological monitoring programs of the Division of Watershed Management and assist in the functions and operations of the Division of Environmental Analysis of the Wall Experiment Station.

Specific duties will include:

1. participate in water quality and ecological field surveys by calibrating sampling equipment, obtaining field samples, delivering samples to the analytical laboratory, and processing biological samples;
2. participate in the sampling and analysis of fish, aquatic macroinvertebrate and algal populations and their habitat;
3. participate in stream discharge measurements and other hydrological techniques;
4. assist in compiling and entering field and laboratory environmental monitoring data into electronic databases;
5. assist with water data analysis and report preparation;
6. prepare environmental samples for analysis;
7. operator and maintain laboratory instrumentation;
8. maintain accurate records of samples analyzed and analytical results; and
9. participate in laboratory quality assurance programs.

**COST:** \$75,000

**FUNDING:** 100% by EOEA

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-01/MWI**

**PROJECT TITLE:** Shawsheen TMDL Implementation

**INVESTIGATOR:** U.S. Air Force/Hanscom AFB

**LOCATION:** Shawsheen River Basin

**DESCRIPTION:** This project will implement recommendations set forth in the Shawsheen River Bacteria Total Maximum Daily Load (TMDL) Analysis developed by Limno-Tech, Inc., in conjunction with the Shawsheen Watershed Team.

Specific tasks include:

1. prepare a Quality Assurance Project Plan (QAPP) for the field sampling and data collection program;
2. collect information on subsurface sewage disposal systems to develop a list of those systems that are potentially failing;
3. conduct wet-weather sampling at selected storm drains to identify potential sources of fecal coliform bacteria;
4. develop BMP recommendations for identified stormwater discharges; and
5. prepare a final project report.

**COST:** \$70,000

**FUNDING:** \$50,000 by EOE  
\$20,000 by U.S. Air Force

**DURATION:** 2000 – 2001



**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-02/MWI**

**PROJECT TITLE:** Westport River Nonpoint Source Pollution Assessment Project

**INVESTIGATOR:** Environmental Science Services, Inc.

**LOCATION:** Buzzards Bay Watershed

**DESCRIPTION:** This project will conduct an assessment of nonpoint source pollution in the Westport River subwatershed of Buzzards Bay.

Specific tasks include:

1. conduct a comprehensive environmental and land use assessment;
2. map and assess existing and potential nonpoint source pollution;
3. assess local capacity to address nonpoint source pollution impacts;
4. inventory and evaluate stormwater in the Head-of-Westport Area;
5. develop a Quality Assurance Project Plan (QAPP) for water quality and bacteria sampling;
6. develop recommendations and BMP's for nonpoint source pollution remediation; and
7. prepare a final project report.

**COST:** \$49,500

**FUNDING:** 100% by EOEA

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-03/MWI**

**PROJECT TITLE:** Cape Cod Nutrient Loading Studies

**INVESTIGATOR:** Tetra Tech, Inc.

**LOCATION:** Cape Cod Watershed

**DESCRIPTION:** This project will conduct nutrient loading studies for Back River, Lewis Bay, Parker River and Swan Pond on Cape Cod.

Specific tasks include:

1. review and summarize available hydrologic and nutrient data for each waterbody;
2. delineate the watersheds/subwatershed;
3. conduct flushing studies of selected waterbodies;
4. develop critical nitrogen loads for each waterbody;
5. develop watershed nitrogen management options;
6. conduct public participation and information transfer to stakeholders groups; and
7. prepare final project report.

**COST:** \$95,000

**FUNDING:** 100% by EOEa

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-04/MWI**

**PROJECT TITLE:** Chicopee Inventory of Stormwater Structures

**INVESTIGATOR:** Environmental Science Services, Inc.

**LOCATION:** Chicopee River Basin

**DESCRIPTION:** This project will conduct an inventory of stormwater structures in selected communities in the Chicopee River Watershed.

Specific tasks include:

1. conduct a survey in up to fifteen (15) communities to collect available information on stormwater structures;
2. develop an inventory of stormwater structures within the selected communities;
3. conduct water quality and bacteriological sampling at selected storm drains to identify “hot spots”;
4. develop a database of stormwater structures;
5. create a GIS data layer; and
6. prepare a final project report.

**COST:** \$40,000

**FUNDING:** 100% by EOE A

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-05/MWI**

**PROJECT TITLE:** Lake Tashmoo and Lake Anthony/Sunset Lake Nutrient Loading Studies

**INVESTIGATOR:** Martha's Vineyard Commission

**LOCATION:** Islands (Martha's Vineyard) Watershed

**DESCRIPTION:** This project will perform nutrient loading studies for Lake Tashmoo and Lake Anthony/Sunset Lake complex.

Specific tasks include:

1. review available data and identify data gaps;
2. prepare a Quality Assurance Project Plan (QAPP) for the field sampling and data collection program;
3. delineate watershed contributing areas for Lake Anthony/Sunset Lake and Lake Tashmoo;
4. map existing contributing area land uses;
5. install tide gages to collect information on flushing rates;
6. conduct public education and outreach; and
7. prepare final project reports for each waterbody identifying watershed management strategies.

**COST:** \$45,000

**FUNDING:** 100% by EOE A

**DURATION:** 2001 – 2002



**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-06/MWI**

**PROJECT TITLE:** Narragansett and Mount Hope Bays and Ten Mile Basin  
Nonpoint Source Pollution Assessment

**INVESTIGATOR:** Environmental Science Services, Inc.

**LOCATION:** Narragansett Bay, Mount Hope Bay and Ten Mile River  
Basin

**DESCRIPTION:** This project will conduct an assessment of nonpoint source  
pollution in the Narragansett and Mount Hope Bays and Ten  
Mile River Basin and collect data on the Palmer River to help  
develop a TMDL.

Specific tasks include:

1. conduct a comprehensive environmental and land use  
assessment;
2. inventory, map and assess historic, existing and potential  
nonpoint source pollution sources;
3. assess local capacity to address nonpoint source pollution  
impacts;
4. evaluate and model pollutant loadings in the Ten Mile  
and Palmer River Watersheds;
5. develop a Quality Assurance Project Plan (QAPP) for the  
water quality sampling and field investigations;
6. collect data to develop a TMDL for the Palmer River;
7. conduct public meetings; and
8. prepare a comprehensive nonpoint source pollution  
management plan.

**COST:** \$129,000

**FUNDING:** 100% by EOEA

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-07/MWI**

**PROJECT TITLE:** South Coastal Nonpoint Source Assessment Project

**INVESTIGATOR:** GeoSyntec

**LOCATION:** South Coastal Watershed

**DESCRIPTION:** This project will conduct a comprehensive nonpoint source pollution assessment in the towns of Plymouth, Kingston, and Pembroke.

Specific tasks include:

1. establish a water quality task force and public awareness panel;
2. acquire and update GIS Land Use and Orthophoto Maps for the study area;
3. identify stormwater structures and impervious surface areas within each town;
4. review and assess community-level resource protection programs;
5. assess local water quality protection measures; and
6. prepare a final web-based project report and GIS Maps.

**COST:** \$40,000

**FUNDING:** 100% of EOEI

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-08/MWI**

**PROJECT TITLE:** Shawsheen River Storm Drain Monitoring

**INVESTIGATOR:** Environmental Science Services, Inc.

**LOCATION:** Shawsheen River Basin

**DESCRIPTION:** This project will conduct water quality and bacteriological sampling and habitat assessment at selected locations in the Shawsheen River Basin.

Specific tasks include:

1. develop a Quality Assurance Project Plan (QAPP);
2. conduct water quality and bacteriological sampling and habitat assessment at 20 sites in accordance with the approved QAPP;
3. present the findings of the study; and
4. prepare a final project report.

**COST:** \$20,000

**FUNDING:** 100% by EOEa

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-09/MWI**

**PROJECT TITLE:** Technical Assistance for Stormwater Phase II Compliance

**INVESTIGATOR:** Vanasse Hangen Brustlin, Inc.

**LOCATION:** North Coastal Watershed

**DESCRIPTION:** This project will provide planning and technical assistance for stormwater Phase II compliance.

Specific tasks include:

1. assist Lynn, Peabody, and Malden in assessing their current status relative to stormwater Phase II regulations;
2. assist Beverly, Danvers, Gloucester, Marblehead, Salem, Saugus, Swampscott, Lynnfield, Melrose, Reading, Wakefield, and Revere on Stormwater Phase II Planning;
3. conduct workshops; and
4. prepare final project report.

**COST:** \$47,305

**FUNDING:** 100% by EOEA

**DURATION:** 2001 – 2002



**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-10/MWI**

**PROJECT TITLE:** Dirt Road Maintenance and Repair Pilot and Feasibility Study

**INVESTIGATOR:** Berkshire Regional Planning Commission

**LOCATION:** Farmington, Hudson, Housatonic, Deerfield, Westfield Basins

**DESCRIPTION:** This project will demonstrate the application of a Generic Notice of Intent (GNOI) for use on road repair and maintenance work.

Specific tasks include:

1. identify one community in each of the Farmington, Hudson, Housatonic, Deerfield and Westfield Watersheds of Berkshire County for demonstration;
2. apply a GNOI in the five communities for road repair and maintenance activities;
3. organize and present workshops on GNOI implementation;
4. research BMP award recognition programs and develop criteria for a local model; and
5. prepare a final project report.

**COST:** \$35,000

**FUNDING:** 100% by EOEA

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-11/MWI**

**PROJECT TITLE:** Madaket Harbor Circulation Study

**INVESTIGATOR:** Applied Science Services, Inc.

**LOCATION:** Islands (Nantucket) Watershed

**DESCRIPTION:** This project will develop and apply a hydrodynamic tidal model for the Madaket Harbor System on Nantucket Island.

Specific tasks include:

1. conduct data acquisition and review of existing information;
2. develop a Quality Assurance Project Plan (QAPP) for the hydrologic and water quality data collection program;
3. perform sampling and data collection in accordance with approved QAPP;
4. apply and calibrate the hydrodynamic and flushing models to the Madaket Harbor/Long Pond System; and
5. prepare a final project report.

**COST:** \$49,983

**FUNDING:** 100% by EOE A

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-12/MWI**

**PROJECT TITLE:** Hudson and Housatonic Watershed Teams Laboratory Services

**INVESTIGATOR:** Berkshire Enviro-Labs, Inc.

**LOCATION:** Hudson and Housatonic River Basins

**DESCRIPTION:** This project will provide laboratory services to the Hudson and Housatonic Watershed Teams for selected chemical and bacteriological constituents on river and lake samples collected by volunteer monitors.

Specific tasks include:

1. analyze samples for chemical and bacteriological constituents including total phosphorus and total and fecal coliform bacteria;
2. provide verbal and written analyses reports; and
3. provide a summary report of all analyses.

**COST:** \$10,000

**FUNDING:** 100% by EOEA

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-13/MWI**

**PROJECT TITLE:** Characterization of Polychlorinated Biphenyls (PCB's) in the Millers River Watershed Phase 3 Investigations

**INVESTIGATOR:** U.S. Geological Survey

**LOCATION:** Millers River Basin

**DESCRIPTION:** This project will continue to investigate the current sources of PCB's in the Millers River Basin by collecting and analyzing water samples.

Specific tasks include:

1. deploying passive sampling devices at selected locations on the Millers River and Otter River;
2. measuring current velocity at each site during sample deployment to estimate the volume of water sampled by the passive samplers;
3. retrieving samplers and analyzing samples for PCB congeners;
4. calculating appropriate average concentrations of PCB's in the water during the sampling interval; and
5. report findings and recommendations.

**COST:** \$73,000

**FUNDING:** 100% by EOEA

**DURATION:** 2000 – 2001



**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-14/MWI**

**PROJECT TITLE:** SuAsCo Total Maximum Daily Load (TMDL) Phase 3 Investigations

**INVESTIGATOR:** U.S. Army Corps of Engineers – New England District

**LOCATION:** Concord (Sudbury-Assabet-Concord) River Basin

**DESCRIPTION:** This project will collect information for use in determining a Total Maximum Daily Load (TMDL) for nutrients in the Sudbury and Concord Rivers.

Specific tasks will be to:

1. prepare a Quality Assurance Project Plan (QAPP) for the Sudbury and Concord River sampling;
2. conduct water quality and biological sampling in the Sudbury and Concord Rivers; and
3. prepare a final report.

**COST:** \$175,000

**FUNDING:** \$87,500 by EOE  
\$87,500 by USACOE

**DURATION:** 2001 – 2002

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-15/MWI**

**PROJECT TITLE:** Western Regional Watersheds Wetlands Circuit Rider

**INVESTIGATOR:** Undetermined

**LOCATION:** Deerfield, Westfield, Farmington, Millers River Basins

**DESCRIPTION:** This contractor will provide technical assistance on the Massachusetts Wetlands Protection Act (as amended by the Rivers Protection Act) to conservation commissions and other municipal officials within the western regional watersheds.

Specific duties include:

1. meeting with boards, commissions and conservation agents to assist them in interpreting regulations, policies and guidance;
2. preparing educational materials and conducting training workshops;
3. responding to requests for information; and
4. attending meetings with watershed teams.

**COST:** \$40,500

**FUNDING:** 100% by EOEa

**DURATION:** 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-16/MWI**

**PROJECT TITLE:** Volunteer Monitoring Coordinators

**INVESTIGATOR:** Undetermined

**LOCATION:** Statewide

**DESCRIPTION:** These contractors will coordinate surface water monitoring activities in selected watersheds according to the 5-year basin cycle.

Specific duties include:

1. review “Year 1” watershed team activities and determine monitoring data gaps that can be filled in “Year 2”;
2. review the state’s 303d list and Total Maximum Daily Load (TMDL) strategy and identify data needs for 305b, 303d, and TMDL development;
3. meet with appropriate EOEA and DEP team leaders and citizen monitoring groups to determine and define roles that each group can play in data gathering to meet state and team objectives;
4. formulate quality assurance project plans (QAPPs) for performing water quality and ecological field surveys during Year 2 of the watershed cycle and identifying the roles of both DEP field staff and volunteers;
5. identify additional monitoring activities for volunteer groups during other years of the watershed cycle;
6. perform field and laboratory investigations to evaluate the status of water quality and biological integrity in assigned watersheds;
7. analyze and interpret monitoring data and prepare technical reports or memoranda;
8. communicate results of water quality and biological monitoring studies to agency personnel, watershed teams, and the general public; and
9. participate in the development of “Year 3” water quality assessments in assigned watersheds.

**COST:** \$200,000

**FUNDING:** 100% by EOEA

**DURATION:** 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-17/MWI**

**PROJECT TITLE:** Technical Support Services for Central Regional Watershed Teams

**INVESTIGATOR:** Undetermined

**LOCATION:** Concord, French and Quinebaug, Nashua, Millers, Chicopee River Basins

**DESCRIPTION:** This contractor will provide technical support services to the watershed teams in the Central Region.

Specific duties will include:

1. assist with SMART monitoring;
2. coordinate watershed-related activities between the watershed teams and DEP's CERO; and
3. participate in watershed team meetings.

**COST:** \$25,000

**FUNDING:** 100% by EOEA

**DURATION:** 2001



**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-18/MWI**

**PROJECT TITLE:** Technical Support Services for Water Quality Assessment Activities

**INVESTIGATOR:** Mollie Weinstein

**LOCATION:** Statewide Massachusetts

**DESCRIPTION:** This contractor will be responsible for preparing water quality assessment reports, assisting in water quality monitoring efforts, developing new approaches for presenting and disseminating water quality information, and communicating with the public relative to assessment findings.

Specifically, the contractor will be responsible for:

1. preparing water resource assessment reports using data and other appropriate information;
2. conducting meetings with various agency staff, citizen groups, municipal officials and consultants relating to resource assessments;
3. assisting in all aspects of water resource monitoring and assessment including project plan development, field monitoring, data management, data analysis and interpretation, and resource assessment reporting;
4. developing new approaches for presenting and disseminating water resource assessments; e.g., via the internet;
5. final review of all assessment reports to ensure the highest possible quality or product before dissemination; and
6. responding to public requests for water resource assessment information.

**COST:** \$45,892

**FUNDING:** 100% by EOEA

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INITIATIVE PROJECT 01-19/MWI**

**PROJECT TITLE:** Technical Support Services for Water Quality and Laboratory Activities

**INVESTIGATOR:** Richard Chase

**LOCATION:** Statewide Massachusetts

**DESCRIPTION:** This contractor will perform environmental monitoring and assessment work and develop and maintain Quality Assurance/Quality Control (QA/QC) procedures for monitoring and data management for the Watershed Planning Program of the Massachusetts Division of Watershed Management (DWM).

Specifically, the contractor will be responsible for:

1. evaluating all DWM data to assure that all QA/QC procedures are followed;
2. working with DEP's Wall Experiment Station to ensure that samples delivered to and data received from the laboratory have followed appropriate QA/QC procedures;
3. developing Standard Operating Procedures for all DWM field monitoring QA/QC and data recording QA/QC procedures;
4. assisting in all activities aspects of water resource monitoring and assessment including project plan development, field monitoring, data management, data analysis and interpretation, and resource assessment reporting;
5. researching current literature on field monitoring and QA/QC issues to ensure that DWM procedures are up-to-date and appropriate for the data objectives;
6. reviewing and commenting on all DWM Quality Assurance Project Plans (QAPP's) for completeness and accuracy; and
7. reviewing QAPP's and QA/QC information for data received from external sources and determining the level of usefulness in making water resource assessments.

**COST:** \$37,553

**FUNDING:** 100% by EOE A

**DURATION:** 2000 – 2001

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MASSACHUSETTS WATERSHED INTIATIVE PROJECT 01-20/MWI**

**PROJECT TITLE:** Seasonal Support for Water Quality Monitoring and Laboratory Activities

**INVESTIGATOR:** Department of Environmental Protection

**LOCATION:** Statewide Massachusetts

**DESCRIPTION:** The seasonal support staff will participate in water quality and biological monitoring programs of the Division of Watershed Management and assist in the functions and operations of the Division of Environmental Analysis of the Wall Experiment Station.

Specific duties will include:

1. participate in water quality and ecological field surveys by calibrating sampling equipment, obtaining field samples, delivering samples to the analytical laboratory, and processing biological samples;
2. participate in the sampling and analysis of fish, aquatic macroinvertebrate and algal populations and their habitat;
3. participate in stream discharge measurements and other hydrological techniques;
4. assist in compiling and entering field and laboratory environmental monitoring data into electronic databases;
5. assist with water data analysis and report preparation;
6. prepare environmental samples for analysis;
7. operate and maintain laboratory instrumentation;
8. maintain accurate records of samples analyzed and of analytical results; and
9. participate in laboratory quality assurance programs.

**COST:** \$75,000

**FUNDING:** 100% by EOEA

**DURATION:** 2000 - 2001







